

Appl. Serial No. 09/054,864
Reply Filed: Sept. 30, 2008
Final Office Action mailed: January 28, 2008

REMARKS

In view of the following remarks, reconsideration is requested.

Claims 5 and 19-54 remain in the application of which claims 5, 24, 30, 36, 42 and 43 are independent. Claims 5, 24 and 43 have been amended.

Rejections under 35 USC § 102

Claims 5-18, 21, 23-24, 27, 29-30, 33, 35-36, 39, 41, 43-44, 49-52 and 54, of which claims 5, 24, 30, 36 and 43 are independent, were rejected under 35 USC § 102 in view of US Patent 6,279,061 (hereinafter, "Aoki"). While the Final Office Action again refers to claims 6-18 as being rejected, Applicant believes that this is a typographical error, as claims 6-18 were previously cancelled. The rejection is respectfully traversed.

Aoki describes at col. 4, lines 35-52:

"The LINK 52 reads out the image data from the FIFO memory 61 on a frame-by-frame basis, packetizes the read-out image data, and output[s] resulting packets to the PHY 51. The PHY 51 transmits those packets via the 1394 Bus 11 as isochronous packets, whereby the packets are supplied to the editor 1."

As noted in the Applicant's prior replies, the transfer of video data in Aoki over the 1394 bus is accomplished using standard 1394 isochronous data packets. See Aoki col. 5, lines 10-11 and col. 6, lines 18-20. Although Aoki states that image data is read from the FIFO memory 61 on a frame-by-frame basis, it does not state that the image data is sent using frame by frame flow control *over the high speed serial bus*. Instead Aoki states that "[t]he PHY 51 transmits those packets via the 1394 Bus 11 as isochronous packets." Col. 4, lines 35-52.

The Office Action relies on a factual finding that transmission, in Aoki, of packets of video data over the 1394 Bus as isochronous packets involves any type of frame by frame flow control. There is no substantial evidence in the record or in Aoki to support such a finding, for at least the following reasons.

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First, it is well known in the IEEE-1394 standard that isochronous data transfers do not involve any request/reply protocol, and there is no frame-by-frame flow control of that transmission. There is nothing in the Office Action, Aoki, or the standard document cited by the Examiner (IEEE-1394 Draft 8.0v2, July 7, 1995) to suggest otherwise.

Second, the Office Action attempts to rely on the Applicant's specification to support this conclusion. This reliance is misplaced because the portion relied upon is taken completely out of context and has nothing to do with transfer of data over an IEEE-1394 serial bus. In the Applicant's specification, one embodiment relates to video interconnects such as SMPTE 259M and SMPTE 292M. The specification says, in this context, that "one link is used to send requests to a video source device and another link is used by the video source device to send video data." Page 18, lines 12-14. In this context, "the transfer [of video data over the other link] may be either of the continuous form or the isochronous form." Page 18, lines 16-17. This portion of the application does not state that isochronous transfer over IEEE-1394 constitutes frame-by-frame flow control, or that isochronous transfers involve frame-by-frame flow control.

Therefore, the conclusion that transmission, in Aoki, of packets of video data over the 1394 Bus as isochronous packets involves any type of flow control is not supported by substantial evidence. Because the rejection is based on an erroneous finding of fact, it should be withdrawn.

In particular, because transmission, in Aoki, of packets of video data over the 1394 Bus uses isochronous packets and does not involve any type of flow control, then Aoki does not describe the limitations of "frame by frame flow control over the high speed serial bus," as recited in independent claims 5, 24, 30, 36 and 43. Accordingly, the rejection should be withdrawn for at least this reason.

The Office Action also relies on a factual finding that the PLAY command, in Aoki, is issued for each frame of video data, or that there are multiple requests. There is no evidence in the record or in Aoki to support such a finding.

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Aoki initiates playback of video by having the host device send a "PLAY" command to the conversion device. Aoki states, at col. 7, lines 41-59:

"When an AV/C command in which "opcode" indicates PLAY is supplied from the editor 1 via the 1394 bus 11, the system controller 54 receives it and outputs an AV/C response of "Accept" to the editor 1 via the 1394 bus 11. Further, the system controller 54 converts the current head position to a LBA and converts a 1394 interface command PLAY into an IDE interface command READ, and the output those to the IDE controller 71. The IDE controller 71 converts the IDE command READ into a more specific command READ SECTORS and converts the LBA that indicates the execution position of the command into more specific values that indicate sectors, and output those to the HDD 4. In response to the received command, the HDD 4 reproduces data from the specified sectors and outputs the reproduced data to the IDE controller 71. The IDE controller 71 outputs the received reproduction data to the FIFO memory 61 and returns a response indicating the completion of the playback to the system controller 54."

Aoki also states, at col. , lines :

"[I]f "opcode" is "PLAY," at step S5 the system controller 54 causes reproduction of the data stored in the HDD 4. Further, the system controller 54 outputs an instruction to the IDE controller 71 to have it convert reproduced data suitable for the IDE interface 12 that is supplied from the HDD 4 into ordinary data. Further, the system controller 54 controls the FIFO memory 61 via the LINK/FIFO controller 62 to have it store image data that is supplied from the IDE controller 71 and output the image data on a first-in first-out basis to the LINK 52. If at this time the amount of stored image data is less than 3 frames, the FIFO memory 61 continues to set an empty flag until it stores image data of 3 frames, for instance. While the empty flag is set, the IDE controller 71 reproduces data blocks from the HDD 4, converts the data blocks into original image data blocks, and supplies those, for storage, to the FIFO memory 61. The LINK 52 reads out the image data from the FIFO memory 61 on a frame-by-frame basis, packetizes the read-out image data, and output resulting packets to the PHY 51. The PHY 51 transmits those packets via the 1394 bus 11 as isochronous packets, whereby the packets are supplied to the editor 1."

There is nothing in the above excerpts from Aoki that would support the conclusion that the PLAY command, in Aoki, is issued for each frame of video data, or that there are multiple requests. Because the rejection is based on an erroneous finding of fact, it should be withdrawn.

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In particular, because the PLAY command, in Aoki, is issued only once for multiple frames of video data, then Aoki does not describe the limitations of "receiving request packets" (emphasis of the plural added) "... wherein each request packet indicates a request from the video processing device to transfer video data defining a single video frame," as recited in independent claims 5 and 43. Aoki also does not describe the limitations of "sending request packets" (emphasis of the plural added) "... wherein each request packet includes a stream identifier and requests video data defining a single video frame," as recited in independent claims 24. Aoki also does not describe the limitations of "sending a request packet ... to request video data defining a video frame ... and repeating the steps of sending and receiving for each video frame of the requested video sequence," as recited in independent claim 30 (emphasis added). Aoki also does not describe the limitations of "receiving a request packet ... requesting video data defining a video frame" and "repeating the steps of receiving and sending for each video frame of the requested video sequence," as recited in independent claim 36 (emphasis added). Accordingly, the rejection should be withdrawn for at least this reason.

In view of the foregoing, the rejection of independent claims 5, 24, 30, 36 and 43 should be withdrawn. Dependent claims 21, 23, 27, 29, 33, 35, 39, 41 and 44 are distinguishing over Aoki for at least the same reasons.

In addition, regarding dependent claim 44, the Office Action equates the packet information from a source node sent during bus arbitration,¹ which includes speed information, to the claimed "packet rate field." However, claim 44 recites that "the request packets include a packet rate field that specifies a packet rate at which the host device is to send the video data to the video processing device." In response to each request packet (defined in claim 43), the claimed host device sends data packets with video data. The speed information sent between devices during bus arbitration in Aoki is not included in "request packets" as such request packets are defined in claim 44, namely

¹ The Office Action thus refers to packets sent during bus arbitration, the PLAY command and packets sent during isochronous data transfer as corresponding in some way to request packets, leaving rendering the true basis of the rejection.

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a packet which a. "indicates that the video processing device has sufficient memory available to be capable of receiving video data of a video frame" and b. "includes a packet rate field that specifies a packet rate at which the host device is to send the video data to the video processing device," and c. causes the host to send, "in response to a request packet, data packets including the video data of a video frame from the memory to the video processing device" as claimed. In other words, the speed information exchanged in Aoki during bus arbitration is not exchanged in messages that actually request and transfer the video data as recited in claims 44.

In view of the foregoing, the rejection of claim 44 should be withdrawn for at least this additional reason.

Regarding dependent claims 21, 27, 33 and 39, Applicant repeats and expands on the arguments made in the prior reply, and *again* respectfully requests a response to the substance of these arguments.²

In particular, the Office Action asserts that the "Destination_ID" in Fig. 2 of Aoki corresponds to the claimed "target field." In Aoki, the Destination_ID indicates the destination to which a packet is being sent. Thus, in Aoki, if a packet is being sent from the conversion device 2 to the host device 1, then the Destination_ID field in the packet would indicate the host device 1. Under IEEE-1394, the host device 1 reads a packet from the bus if the packet's Destination_ID field indicates the host device; otherwise the host device ignores the packet. In contrast, claim 21 recites that the target field (which is in a data packet that includes the video data and that is sent from the host device to the video processing device -- see claim 5) "indicat[es] a device to which the video processing device is directed to transfer the video data." In other words, the recipient of the data packet receives information about yet another device to which it is directed to further transfer the video data. Similar interpretations apply to claims 27, 33 and 39. The destination_ID in Aoki does not meet this limitation and the rejection of claims 21, 27, 33 and 39 should be withdrawn for at least this additional reason.

² MPEP Section 707.07(f) states: "Where the applicant traverses any rejection, the examiner should, if he or she repeats the rejection, take note of the applicant's argument and answer the substance of it."

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The Office Action again asserts that claims 49-52 and 54 were "analyzed with respect to apparatus claim" 5 or 24 and that similar dependent claim 53 was "analyzed with respect to claim 42. See Final Office Action pages 7 and 8, page 12 and page 4.

As noted in Applicant's prior reply, the substance of these claims and the Applicants arguments have yet to be addressed in any Office Action. These claims all recite "wherein each data packet in the plurality of data packets includes a packet header and a data field, wherein the packet header includes the stream identifier and the data field includes the video data". These limitations are not found in claims 5, 24 and 42. These limitations are not addressed in the Office Action in connection with the rejections of claims 5, 24 and 42. Applicant's arguments regarding their patentability were presented in the Applicant's Reply of March 28, 2007, on page 12. In particular, the Office Action asserts that the claimed "stream identifier" corresponds to the PID in the MPEG data. These PIDs in MPEG, if present in Aoki, would be part of the data transported by the IEEE-1394 packets, and thus would be found in the data field for a packet, and not in the packet header. Accordingly, these claims are distinguishing over Aoki.

In view of the foregoing, this rejection of claims 5, 21, 23-24, 27, 29-30, 33, 35-36, 39, 41, 43-44, 49-52 and 54 should be withdrawn.

Rejections under 35 USC §103

Claims 19-20, 25-26, 31-32, 37-38 and 45-48 were rejected under 35 USC §103 in view of Aoki and US Patent 5,241,382 ("Paik"). These rejections are respectfully traversed.

All of these claims 19, 20, 25, 26, 31, 32, 37, 38 and 45-48, are dependent claims. These claims are patentable for at least the same reasons, stated above, as the independent claims from which they depend.

Rejections under 35 USC §103

Claims 22, 28, 34, 40, 42 and 53, of which claim 42 is independent, were rejected under 35 USC §103 in view of Aoki and US Patent 6,105,083 ("Kurtze"). These

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rejections are respectfully traversed for the same reasons as provided in the prior reply, which are repeated below. Applicant respectfully requests a response to the substance of these arguments.³

The discussion above regarding Aoki's lack of frame by frame flow control over the high speed serial bus, such as recited in independent claim 42, is applicable. Because Kurtze is not relied upon for teaching this limitation, this rejection of independent claim 42 is traversed for at least the same reasons as discussed above in connection with the other independent claims.

Regarding dependent claims 22, 24, 28 and 40, these claims are patentable for at least the same reasons as the independent claims from which they depend.

In addition, the Office Action relies on a finding of fact that Kurtze teaches a "data packet that includes a boundary signal." See Final Office Action, page 11, lines 6-7.

Kurtze teaches a video processing device with a clocked signal interface between two components. This signal interface includes lines with data signals, a line with a valid data signal and a line with a boundary signal. See Fig. 1 of Kurtze. A timing diagram of this interface is shown in Fig. 2C of Kurtze, which is described at col. 7, lines 28-43 of Kurtze. Kurtze does not teach a packet based request/reply architecture. Instead, in Kurtze, data is transferred between devices when control signals from both of the devices are both asserted upon the same clock edge. See Kurtze, Col. 5, line 59 to Col 6, line 17. There is insufficient evidence to support a factual finding that Kurtze teaches a data packet that includes a boundary signal. To the extent the rejections rely on such an erroneous factual finding, the rejection should be withdrawn.

In addition, there is no sustainable reason provided in the Final Office Action for modifying Aoki according to the teachings of Kurtze. The Final Office Action refers to Col. 2, lines 25-30 of Kurtze as a reason for applying Kurtze's boundary signal to Aoki. However, this portion of Kurtze indicates the benefits of Kurtze's hardware interface, not

³ MPEP Section 707.07(f) states: "Where the applicant traverses any rejection, the examiner should, if he or she repeats the rejection, take note of the applicant's argument and answer the substance of it."

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of boundary signals. It would not be reasonable for one of ordinary skill in the art to expect to achieve the benefits of Kurtze's hardware interface (as stated at Col. 2 lines 25-30 of Kurtze) by finding a way to implement Kurtze's boundary signal in a packet-based communication protocol such as in Aoki.

It also is noted that claim 53 "is analyzed with respect to apparatus claim 42." The improper rejection of claim 53 is addressed above in connection with similar dependent claims 49-52 and 54.

In view of the foregoing, the rejection of claims 22, 28, 34, 40, 42 and 53 should be withdrawn.

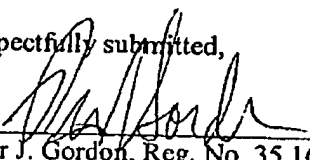
CONCLUSION

In view of the foregoing amendments and remarks, the rejections of record should be withdrawn. If the Examiner believes, after this reply, that the application is not in condition for allowance, the Examiner is requested to call the Applicants' attorney at the telephone number listed below.

If this response is not considered timely filed and if a request for an extension of time is otherwise absent, Applicants hereby request any necessary extension of time. If there is a fee occasioned by this response, including an extension fee, please charge any fee to **Deposit Account No. 50-0876** referencing **Attorney Docket No. A1998012**.

Accompanying this Reply is a Request for Continued Examination (RCE). Please charge the associated fee to **Deposit Account No. 50-0876**.

Respectfully submitted,

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